

INTRODUCTION

WHY CONSERVE WETLANDS?

What are wetlands? And why should we protect them? These seem like simple questions at first glance. But wetlands are quite complex in nature and people's attitudes towards them have changed dramatically over the years. Let's examine the answers to these questions.

Wetlands vary dramatically in form and function from one part of the country to another and from season to season. They vary from the saltwater marshes off the coast of Maine to the prairie potholes of the Dakotas, and from ephemeral vernal pools that team with salamander larvae to permanently-inundated river channels that cycle nutrients that feed larger ecosystems. Indiana lacks the salt and brackish wetlands of the coasts, but it does have a diversity of freshwater wetlands. Wetlands in Indiana range from the dune and swale wetlands along Lake Michigan to the glacially-formed potholes of the lakes region in the northeast to the rich bottomland hardwood swamps along the Patoka, Ohio and Wabash Rivers in the southwest and the Muscatatuck River in the southcentral part of the state. These wetlands are an integral part of larger ecosystems in Indiana. Rivers, lakes, upland fields and woods, forests, and wetlands are interconnected across the landscape to form the vibrant natural heritage of Indiana.

Scientists have learned that wetlands function in many ways including water storage and primary productivity (plant growth). Humans have placed values on many of these functions such as controlling shoreline erosion and providing habitat for endangered species. Wetlands can also improve our communities' economic health by reducing the costs to taxpayers of flooding and water pollution. In addition, Indiana's wetlands provide Hoosiers with opportunities for outdoor recreation like birding, fishing, and nature photography. Many people find that the aesthetic qualities of wetlands and their associated wildlife enhance the quality of life.

Wetlands were historically viewed as obstacles to overcome by European and American settlers migrating westward during the past 200 years. People perceived wetlands as obstacles to farming, homesteading, and the development of businesses and roads. The destruction of Indiana's original wetlands was aided by an ignorance of the valuable role wetlands play in the health of the environment, the economy, and our quality of life.

The U.S. Fish and Wildlife Service estimates that over 50% of the nation's wetlands have been destroyed in the last 200 years. The causes include agricultural drainage and development for residential and commercial use. The rate of loss has slowed in the last decade, but the country is still losing an estimated 117,000 acres of wetlands per year. Wetlands in Indiana and throughout the Midwest have suffered even greater losses. Of Indiana's estimated 5,600,000 original wetland acres, approximately 4,849,000 acres (87%) have been destroyed, primarily through conversion for agricultural crops. This loss threatens wetland-dependent plants and animals including the Indiana bat, American bittern, and northern leopard frog. This loss also results in an increased cost to taxpayers of controlling floods and purifying drinking water.

As people began to understand the importance of wetlands, they also recognized the need to reverse the trend of wetland loss. Numerous initiatives have been undertaken in the past few decades to protect and restore wetlands ranging from judicial actions to regulatory guidance to tax incentives. Voluntary efforts, especially public education and stewardship, are particularly important in the effort to increase awareness and address local needs. A summary of Indiana's initiatives is included in the *Indiana Wetlands Conservation Plan* (see Indiana Resources section).

For over a hundred years, citizens have been playing a unique role in conserving our nation's natural resources. By surveying our mountains, forests, rivers, and lakes, volunteers have provided scientists and natural resource managers with a valuable information to help them understand how these habitats are interconnected within the larger landscape. Many of you may be familiar with lake and stream volunteer monitoring programs. Volunteer monitors help assess the chemical, physical, and biological characteristics of these aquatic habitats in order to determine system health and long-term trends. Increasingly, people are recognizing that in order to protect aquatic resources, we need to protect the other parts of the landscape to which they are connected. For example, if we want to protect or improve the water quality of the Wabash River, we need to prevent industrial and agricultural contaminants from entering the tributary streams that feed into the river. This comprehensive perspective is referred to as watershed protection or watershed management. This approach has led to the development of wetland monitoring programs in which citizens collect baseline information on wetland plants, animals, soil, hydrology, and surrounding land use.

The Indiana Adopt-A-Wetland Program has been developed by the Sierra Club Hoosier Chapter and the Indiana Department of Environmental Management to help Hoosiers connect with the fascinating, valuable wetlands in their communities. By adopting a wetland in your community and collecting important descriptive information about it, you can help protect it. When you communicate your new understanding of wetlands to other citizens in your community, you begin to create a local network that can help ensure the long-term health of Indiana's wetlands. Many wetlands are on private property and the ability of government to manage these habitats is limited. We rely on landowners to take an interest in wetland protection. The success of any wetland protection effort, whether it is regulatory or voluntary, requires a strong foundation of public awareness of wetland functions and values. People who understand why a wetland should be protected are much more likely to support your efforts. Keep in mind that public education should be an ongoing part of your wetland stewardship project.

Thank you for becoming a volunteer wetland monitor. This manual is designed to provide you with a basic understanding of what wetlands are, how they function, and what is involved with wetland monitoring. A brief description of each section of the Indiana Adopt-A-Wetland manual is given below.

CONTENTS OF THIS GUIDE

Chapter 1: Wetland Basics

The general characteristics of wetlands are introduced. What are they, where are they found, and how do you identify them? What types are found in Indiana? Throughout the manual, technical words that are in bold type are listed in the glossary.

Chapter 2: Wetland Functions and Values

The importance of wetlands is discussed as it relates to the general public and to the animals found in wetlands. The distinction is made between the natural processes of wetlands and the value placed on them by humans. Additional information is provided on rare wetland plants and animals and the economic value that these natural systems offer us.

Chapter 3: Adopting your Wetland

The basic concepts of monitoring are discussed, from choosing a site and getting landowner permission to tips on field work.

Chapter 4: Wetland Monitoring Components

The core of the Indiana Adopt-A-Wetland Manual includes the field instructions for monitoring several different features of a wetland including plants, wildlife, amphibians, water quality, soils and hydrology. Each component describes the intended goal, equipment needed, and methods used.

Chapter 5: Taking Action

Learn how to use your knowledge of the wetland to protect it. Suggestions include local planning meetings, educating your neighbors, and assisting local and state government agencies with protecting the health of your site.

Chapter 6: Indiana Resources

Find out where to go for more information or assistance. This includes resource professionals who are associated with universities, government agencies, and conservation and education organizations. Field and planning tools such as maps, field guides, and equipment are listed. Additional general and technical references on wetland science are provided.

Welcome to the Indiana Adopt-A-Wetland Program. We hope that you find this an interesting and valuable experience. Indiana's wetlands will be better protected and valued because of your commitment of time, enthusiasm, and spirit. Enjoy!